REMARKS

Reconsideration of the above-identified Application is respectfully requested. Claims 1-21 are in the case. Claims 1, 6, 11 and 16 have been amended.

Regarding the rejection of Claims 1, 2, 4, 6, 9, 11, 14, 16, 19 and 20 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Chuang et al. in view of Heinonen et al., Claims 1, 6, 11 and 16 have been amended to overcome the rejection. Exemplary independent Claim 1 now recites an OFDM transmitter including, *inter alia*, a training sequence generator configured to generate a training sequence that includes a fractional tone in a guard band *of the training sequence as transmitted from the transmitter*. By including a training sequence generator that includes a fractional tone in a guard band thereof, as transmitted, the OFDM transmitter provides additional information for obtaining a channel response estimate at the corresponding OFDM receiver. Chuang et al. apparently relates to a joint channel estimation and maximum likelihood decoding method for COFDM that includes a training sequence generator and OFDM circuitry. However, it is admitted that Chuang et al. fails to disclose a fractional tone in a guard band.

The patent to Heinonen et al. fails to cure the deficiencies of Chuang et al. The patent to Heinonen et al. apparently relates to an apparatus and method for synchronization between a transmitter and receiver in a multi-carrier communications system such as an OFDM system. To achieve such synchronization, Heinonen et al. propose placing pilot tones *just below* their upper guard band and *just above* their lower guard band *as transmitted*. They do not teach placing any tone actually within either of their guard bands in their transmitter, as required by Claim 1. This is not surprising, because the purpose of their scheme is different from that of the invention as set forth in Claim 1. Their proposed technique involves determining a ratio of energies (U/L) between their upper guard band and their lower guard band at the receiver end of their system. As loss of synchronization occurs, one of their pilot tones will shift into a

guard band *at the receiving end.* Thus, they propose that loss of synchronization can be determined by monitoring their ratio of energies to detect whether it falls below or rises above respective lower and upper predetermined thresholds.

Additionally exemplary Claim 6 is directed to an OFDM receiver including, *inter alia,* a channel estimator, coupled to said OFDM reception circuitry, configured to employ said fractional tone to obtain a channel response estimate *based on an interpolation that assumes that the fractional tone was in the training sequence when transmitted.* Again, Heinonen et al. assume their pilot tones were either just below or just above their guard bands when transmitted.

Please note that the above-described amendments were made to address the concerns set forth in item 4 in the above-identified Office Action, "Response to Arguments." It is respectfully submitted that those concerns have been overcome by these amendments.

The other art of record is even less relevant.

Therefore, for all of the above reasons, it is respectfully submitted that Claim 1 is neither shown nor suggested by Chuang et. al., Heinonen et al., nor, indeed, by any of the art of record, wither considered individually or in any combination, and therefore Claim 1 is allowable. Independent Claim 11 contains a similar limitation to that discussed in connection with Claim 6 above, and independent Claim 16 contains similar limitations to those discussed in connection with both Claims 1 and 6 above, and so are all allowable for the same reasons as those set forth above. Claims 2, 4, 9, 14, 19 and 20 all depend from one of Claims 1, 6, 11 and 16 and so are allowable as well for the same reasons, as well as for the additional limitations found therein. Wherefore reconsideration and withdrawal of this rejection are respectfully requested.

Regarding the rejection of Claims 3, 5, 7-10, 12, 13, 15, 17, 18 and 21 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Chuang et al. in view of Heinonen et al., and further in view of Li, this rejection is respectfully traversed. All of these claims depend from one of Claims 1, 6, 11 and 16 and so are allowable over Chuang et al. and Heinonen et al. for the same reasons as those set forth above. The patent to Li fails to cure the deficiencies of Chuang et

al. and Heinonen et al., having been cited merely for a selected decibel level and for interpolation of tones. The other art of record is even less relevant.

Therefore, for all of the above reasons, it is respectfully submitted that Claims 3, 5, 7-10, 12, 13, 15, 17, 18 and 21 are neither shown nor suggested by Chuang et. al., Heinonen et al., Li, nor, indeed, by any of the art of record, wither considered individually or in any combination, and therefore all of these claims are allowable. Wherefore reconsideration and withdrawal of this rejection are respectfully requested.

It is respectfully submitted that the claims recite the patentably distinguishing features of the invention and that, taken together with the above remarks, the present application is now in proper form for allowance. Reconsideration of the application, as amended, and allowance of the claims are requested at an early date.

While it is believed that the instant amendment places the application in condition for allowance, should the Examiner have any further comments or suggestions, it is respectfully requested that the Examiner contact the undersigned in order to expeditiously resolve any outstanding issues.

To the extent necessary, the Applicants petition for an Extension of Time under 37 C.F.R. §1.136. Please charge any fees in connection with the filing of this paper, including extension of time fees to the Deposit Account No. 20-0668 of Texas Instruments Incorporated.

Respectfully submitted,

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